AMENDMENTS/REMARKS

Applicant has amended claims 1, 15 and 21 to recite additional features of a content addressable memory cell, and new claims 24-28 have been added. No other amendments have been made. Claims 1-4 and 7-28 remain pending in this application. The Examiner's specific rejections will now be addressed.

Claim rejections under 35 USC 102

The Examiner rejected claims 1-3, 10, 15 and 16 under 35 USC 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0058671 (Lindahl). In response, Applicant has amended independent claims 1, 15 and 21 to recite features neither disclosed nor taught in Lindahl. More specifically, claims 1, 15 and 21 now recite that the first type of content addressable memory cell includes search and compare stacks for coupling a matchline to a tail line if search data matches stored data. Embodiments of the search and compare stacks are shown in Figures 3, 4 and 5 of the present application, where in Figure 3, a search and compare stack is embodied by transistors 54 and 55 serially connected between a matchline (ML) and a tail line (TL).

Applicant submits that Lindahl does not disclose or teach the use of search and compare stacks. The Lindahl comparison unit (shown in Fig. 4a, 4b, 5a and 5b) is a complex configuration of logic gates for executing a longest prefix match search. While the search and compare functionality of the Lindahl comparison unit is analogous to the search and compare stacks of the present application, the Lindahl comparison unit does not use search and compare stacks. As shown in the circuit schematics of Lindahl, each CAM cell 300 has a logic OR gate with an output connected to the shared Addr0Match signal line (412). Those skilled in the art will understand that a logic OR gate, or any logic gate for that matter, includes transistors connected between the positive power supply (VCC) and negative power supply (VSS). Depending on the input states of the logic OR gate, it will either drive signal line 412 to VCC or VSS. Lindahl does not include any circuit for coupling signal line (412) to a tail line.

Lindahl is directed to a ternary CAM array which automatically determines the best match found in the CAM array (longest prefix match) amongst a plurality

of matches found in response to a search. This is similar to finding the highest priority match in the present application. Since each CAM entry (each row) can have "don't care" bits (set by an active mask bit), the longest prefix match identifies the matching entry having the least number of "don't care" bits (since "don't care" bits always match the search data). In summary, a bit in a column that matches search data will disable all other "don't care" matches in the same column. Lindahl achieves this through his elaborate comparison unit 304, which includes logic gates 404, 405, 406, 407 and 408, and outputs fed to other comparison units in the same column. The search and compare stacks used in the CAM cells of the present application are incapable of executing the longest prefix match, which is why they are not used in the Lindahl system. In the present application, a priority encoder is used to determine the highest priority matching entry.

Therefore, since Lindahl does not disclose or teach the use of search and compare stacks in each first type of CAM cell, Applicant submits that claims 1, 15 and 21 are not anticipated by Lindahl. Therefore, withdrawal of the Examiner's rejection under 35 USC 102(e) to claims 1, 15 and 21, and dependent claims 2, 3, 10 and 16 which depend directly or indirectly from claims 1, 15 and 21, is respectfully requested.

Claim rejections under 35 USC 103

The Examiner rejected claims 4, 7-9, 14, 17 and 21-23 under 35 USC 103(a) as being obvious in view of the combination of U.S. Patent No. 6,108,227 (Voelkel) and Lindahl. In view of the aforementioned amendment to claims 1, 15 and 21 and the Applicant's remarks supporting the novelty of claims 1, 15 and 21 over Lindahl, Applicant submits that claims 4, 7-9, 14, 17 and 21-23 are not obvious in view of Lindahl and Voelkel.

Claim rejections under 35 USC 103

The Examiner rejected claims 11-13 and 18-20 under 35 USC 103(a) as being obvious in view of the combination of Lindahl and U.S. Patent No. 6,191,970 (Pereira). In view of the aforementioned amendment to claims 1, 15 and 21 and the Applicant's remarks supporting the novelty of claims 1, 15 and 21 over Lindahl, Applicant submits that claims 11-13 and 18-20 are not obvious in view of Lindahl and Pereira.

New claims 24-28

Applicant has added new claims 24-28, which depend directly or indirectly upon amended claim 1. New claims 24-28 recite additional features and limitations of the search and compare stacks recited in amended claim 1. Applicant submits that no new subject matter is being added, and that claims 24-28 are allowable in view of the aforementioned amendments and remarks.

Therefore, Applicant submits that the application is now in condition for allowance, and favorable action to that end is respectfully requested.

We believe no fee is required. However, if a fee is due, the Commissioner is hereby authorized to charge any additional fees, and credit any overpayments to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

Respectfully submitted,

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